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Family Tetragonuridae

Body elongate, fusiform, deepest at front of spinous dorsal. Head broad above, moderate. Snout compressed, obtuse, end convex. Eye large, but slightly advanced in head length. Mouth moderate, jaws equal, mandibular ramus greatly elevated inside, with convex dental edge. Teeth moderate, compressed, present on palate. Gill opening large. ~~Scales small.~~ ~~Head most~~ No air bladder. Pyloric appendages numerous. Scales rather small, beveled, striated. Head largely scaly. Lateral line present. Dorsals continuous, soft rays fewer than spines. Anal like soft

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dorsal. Caudal forked, with  
well developed rudimentary  
rays. Pectoral short. Ventral  
small, partly abdominal.

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• Genus Tetragonurus Risso

Tetragonurus Risso, Ichth. Nice,  
p. 347, 1810. (Type Tetragonurus  
cuvieri Risso, monotypic.)

Ctenodax Macleay, Proc. Linn. Soc.  
New South Wales, vol. 10, p. 718, 1885.  
(Type Ctenodax wilkinsoni Macleay,  
monotypic.)



Depth  $3\frac{1}{4}$  to  $3\frac{4}{5}$ ; head  $3\frac{1}{5}$  to  $3\frac{1}{2}$ , width  $1\frac{3}{5}$  to 2. Snout  $2\frac{2}{3}$  to 3 in head; eye  $3\frac{1}{5}$  to  $4\frac{1}{6}$ ,  $1\frac{1}{4}$  <sup>to  $1\frac{1}{3}$</sup>  in snout, 1 to  $1\frac{1}{8}$  in interorbital; maxillary reaches  $\frac{1}{3}$  to  $\frac{2}{5}$  in eye, expansion  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in eye, length  $2\frac{1}{6}$  to  $2\frac{2}{5}$  in head; teeth granular, in about 3 irregular rows in each jaw; band of granular teeth on vomer and each palatine; interorbital  $3\frac{1}{3}$  to  $3\frac{4}{5}$ , slightly concave; barbel  $1\frac{1}{3}$  to  $1\frac{1}{2}$ . Gill rakers 6 to 8 + 16 to 20, lanceolate,  $1\frac{1}{2}$  in gill filaments, which  $1\frac{1}{5}$  in eye; 6 lower as rudiments.

Scales 32 to 34 in lateral line to caudal base and 3 or 4 more on latter; 3 above, 6 or 7 below, 14 to 16 predorsal; 3? or 4 rows on cheek.

Scales with 5 basal radiating

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Body slender, plump, partly  
cylindrical. Head robust.  
Snout moderate. Eye large, less  
than snout. Mouth short, oblique,  
jaws box like. Teeth uniserial,  
close set, conic. Opercle entire.  
Gill membranes united below,  
free from isthmus. Scales hard,  
ciliated, grooved, very adherent.  
Lateral line single, straight or  
little curved. Dorsal divided,  
low short spines 15, soft rays  
fewer. Anal little smaller,  
similar to soft dorsal. Caudal  
small. Pectoral small. Ventral  
placed below middle of pectoral,  
with spine and 5 rays.

Tetragonurus cuvieri Risso

Tetragonurus cuvieri Risso, Ichth.  
Nice, p. 34 <sup>pl. 10, fig. 3,</sup> 1810 (type locality;  
Nice); — Günther, Cat. Fish. Brit.  
Mus., vol. 3, p. 408, 1861 (Sicily;  
Mediterranean). — Goode and  
Bean, Oceanic Ichth., p. 230, pl. ,  
fig. 417, 1895 (Wood's Holl, Massa-  
chusetts).

— Valenciennes, Hist. Nat. Poiss., vol.  
11, p. 172, pl. 318, 1836 (Genoa; Nice;  
Toulon). — Swanison, Nat. Hist.  
Animals, vol. 2, p. 244, fig. 69, 1839  
(copied).



Caudal gray to whitish, upper lobe with 3 or 4 oblique black bars and lower lobe with 2 or 3.

Red Sea, Mauritius, Reunion, Portuguese East Africa, Natal, Arabia, India, Ceylon, Pinang, East Indies, Philippines, China, Formosa, Japan, Queensland, Melanesia, Polynesia.

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— McCulloch, Austral. Mus. Mem.,  
no. 5, pt. 1, p. 122, June 29, 1929  
(reference). — Fowler, Mem.  
Bishop Mus., vol. 10, p. 140, 1928  
(Hawaii). — McCulloch, Fishes  
of New South Wales, ed. 3, p. 43,  
pl. 15, fig. 157a, 1934.



Amia cyanotaenia (Bleeker)

Apogon cyanotaenia Bleeker, Nat. Tijds.  
Ned. Indië, vol. 5, 1853, p. 71. Lawajong,  
Solor. — Günther, Cat. Fishes Brit. Mus.,  
vol. 1, 1859, p. 242 (copied). — Gorgoza,  
Ann. Soc. Españ. Hist. Nat. Madrid, vol.  
17, 1888, p. 253 (Cebu). — Weber, Zool.  
Forschungen. Austral. Vögel, vol. 5,  
1895, p. 263 (Amboina). — Elera, Cat.  
Fauna Filip., 1895, p. 471 (Cebu). — Weber,  
Siboga Exped., vol. 65, 1913, p. 223 (Saleyer).  
Amia cyanotaenia Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 7, 1873-76, p. 85,  
pl. (42) 320, fig. 2 (Solor, Amboina,  
Amu).

In the Philippines known from the  
records of Gorgoza and Elera:

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Tetragonurus cuvierii Sassi, Nov.  
Annales Ann. Sci. Nat. Bologna,  
ser. 2, vol. 6, p. 390, 1846 (Genoa).

Tetragonurus atlanticus Lowe,  
Fishes of Madeira, p. 129, pl. 19,  
1843 (~~type locality~~, Madeira  
(Proc. Zool. Soc. London, p. 79, 1839  
(type locality, Madeira)).

Otenodax wilkinsoni Macleay,  
Proc. Linn. Soc. New South Wales,  
vol. 10, no. 4, p. 719, pl. 47, April 3,  
1886 (type locality, Lord Howe  
Island).



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1 example. Cebu market. March 20,  
1909. Length 71 mm.

2 examples. Lampingan Island,  
south of Zamboanga. September 11, 1909.  
Length 38 or 39 mm.

12 examples. Panabutan Bay, Mindanao.  
February 5, 1908. Length 28 to 38 mm.

10 examples. Port Blair Anchorage, East  
Luzon. March 31, 1908. Length 29 to 35 mm.

19 examples. D. 5561. Gomabal Island  
(N. W.), S.  $36^{\circ}$  W., 0.2 mile ( $5^{\circ}50'45''$  N.,  
 $121^{\circ}01'15''$  E.). September 19, 1909.  
Length 26 to 56 mm. These, as well as the  
above small examples are all largely  
scaleless, silvery and difficult of  
determination. They seem to me most  
likely the young of the present species.  
Most all have some traces of 2 dark  
blotches on each caudal lobe, also  
some show traces of 2 dark bands on



Depth  $5\frac{1}{3}$ ; head  $3\frac{2}{3}$ , width  $3\frac{1}{2}$ .  
Snout  $2\frac{4}{5}$  in head; eye  $4\frac{1}{3}$ ,  $1\frac{1}{2}$  in  
snout, greater than interorbital;  
maxillary extends little beyond  
front eye edge, not quite opposite  
front pupil edge, length  $2\frac{1}{5}$  in  
head; 32 upper, conic, subequal,  
rather well spaced, uniserial  
teeth, 36 lower, broad, close set,  
compressed, graduated larger  
posteriorly; vomer and palatines  
with few small conic teeth;  
interorbital  $3\frac{2}{3}$ , broadly convex.  
Gill rakers 7+9, lanceolate,  
long as gill filaments or  $2\frac{1}{4}$  in  
eye.

Scales 100 along lateral line  
to middle caudal base; 7 above,  
12 below, 25 predorsal to occiput  
Lateral line at first parallel with  
dorsal profile, then slopes nearly  
median along side of caudal

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peduncle to middle of caudal  
base, entire course shallow  
groove.

D. XIX, 14, fourth spine 5 in  
head, sixth ray  $2\frac{1}{4}$ ; A. 13,  
fourth ray  $2\frac{1}{5}$ , caudal  $1\frac{1}{2}$ ,  
median rays form obtuse angle  
posteriorly; least depth of caudal  
peduncle 6; pectoral  $1\frac{9}{10}$ , rays  
14; ventral I, 5, fin  $2\frac{9}{10}$  in head.

Uniform brownish, under  
surface paler. Iris with neutral  
gray to silvery tints.

New South Wales, Lord Howe  
Island, Hawaii. Also in the  
Atlantic and Mediterranean.  
Described above from an example  
94 mm long from Honolulu in the  
M.C.Z. Cambridge.

U. S. N. M., No. 44436, Wood's  
Holl, Massachusetts. V. N. Edwards.  
Length 75 mm. Nov. 10, 1890.  
D. XV, I, 10; A. I, 10.

U. S. N. M., No. 85476. Lat.  $38^{\circ}29'$   
 $17'N.$ , long.  $70^{\circ}45'W.$  : Albatross  
Collection (2715). Length 25 mm.



175  
9795, 12577, 12578, Cuxisiyan Island,  
north Balabac Strait. January 2,  
1909. Length 134 to 141 mm.

8572, Cebu market. April 5, 1908.  
Length 13 mm.

17724. Cuyo, Cuyo Island. April 9,  
1909. Length 117 mm.

109. Endeavor Strait, Makampaya  
Sound, Palawan Island. December  
23, 1908. Length 80 mm.

6794, 7374, 7375. Gigoro Point,  
Dinapundan Bay, Samar Island.  
July 28, 1909. Length 108 to 138 mm.

9211 and 9212. Guntao Island,  
Palawan Passage. December 20, 1908.  
Length 127 to 148 mm.

11090 and 18861. Inamucan Bay,  
Mindanao Island. August 8, 1909.  
Length 93 to 150 mm.